

AUSTRALIAN NEUROPTERA. PART IV.

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(Communicated by W. W. Froggatt, F.L.S.)

(Plates xlv.-xlvi.)

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The following descriptions and notes are based upon material of Myrmeleonidae from different sources. The collection of the State Entomologist, Mr. W. W. Froggatt, Sydney, has this time supplied me with many interesting specimens. The material received from Dr. R. J. Tillyard, Chief of the Biological Department, Cawthron Institute, Nelson, contained a number of new species. Dr. Guy A. K. Marshall, Director of the Imperial Bureau of Entomology, British Museum, has sent me a specimen of the new and very interesting *Dictyoleon nervosus*; and from Mr. Tage Scheibel, Coolum, Queensland, I have received much valuable material. Professor Dr. Yngve Sjöstedt, Stockholm Museum, has forwarded to me some interesting specimens from Dr. E. Mjöberg's Australian Expedition. Mr. Herbert Campion, British Museum, has kindly furnished me with photos of some of Walker's Australian type-specimens, and he has also assisted me in comparing photos and drawings of Australian species with type-specimens kept in British Museum. Professor Dr. G. W. Müller, Greifswald Museum, has been so kind as to allow me to re-describe and to take photos of Gerstaecker's type-specimens. To all these gentlemen I have to express my most sincere thanks.

In order to facilitate the study of the Australian Myrmeleonidae I give here re-descriptions and photos of Gerstaecker's species, not hitherto figured, and later on I hope also to be able to give re-descriptions and photos of Gerstaecker's types in the other families of the Australian Neuroptera.

COMPSOLEON.

Banks, Trans. Amer. Ent. Soc., xxix., 1913, p. 223.

To Banks's description should be added the following characters: In forewing Rs arises much before the level of the cubital fork. Anterior Banksian line present in both pairs of wings. 2A and 3A in forewing do not coalesce, but are connected by a short crossvein. Cu₂ in forewing sinuate and ends in Cu_{1p}. A few crossveins in the apical area of both pairs of wings. Hindwing a little shorter than forewing.

Genotype, *Compsoleon (Myrmeleon) occultus* Walker. (Pl. xlv., fig. 1).

ADELOPECTRON, n.g.

Antennae long, slender; club conspicuous, pointed at apex. Vertex raised. Prothorax slender, longer than broad. Abdomen shorter than hindwing. Legs very slender; femora and tibiae of equal length; tibiae twice as long as tarsi. 1st tarsal joint as long as 2nd, 3rd and 4th united; 5th as long as 2nd and 3rd together; 3rd and 4th of equal length, and each of them shorter than 2nd. Claws long, slender and almost straight. Underside of 5th tarsal joint with short blackish bristles. No spurs. Forewing broadened towards pterostigma; apex acute; hindwing longer and more slender than forewing; apex strongly pointed. Costal crossveins simple. In forewing Rs arises much before cubital fork. Cubital fork rather open. Cu₂ slightly sinuate, ending in the middle of Cu_{1p}. 2A and 3A do not coalesce, but are connected by a crossvein. In hindwing Rs arises near base of wing (one crossvein before origin of Rs). A series of gradate crossveins in the apical area of both pairs of the wings.

Genotype, *Adelopteron testaceum*.

This genus is nearly related to the foregoing, but it may be regarded as a more specialised one.

ADELOPECTRON TESTACEUM, n.sp. (Pl. xlv., fig. 2.)

Slender. Face and palpi reddish-yellow; a dark indistinct cordiform spot below the antennae, and a narrow short transverse streak above the antennae. Vertex reddish-yellow, strongly raised and forwardly projecting. Along the front edge of the raised part a blackish streak. A blackish longitudinal median streak on the posterior part of vertex, on dorsum of thorax and on dorsum of 1st and 2nd abdominal segments. Antennae about as long as thorax; pale brown with yellowish annulations dorsally, yellowish ventrally; club black and flattened. Prothorax testaceous, about twice as long as broad, narrowed in front, and with rounded front angles; the lateral margins narrowly blackish. Meso- and meta-thorax with some few dark streaks or spots towards the sides. Venter of thorax testaceous with a pitchy brown streak below the base of the wings. Thorax with long white hairs or bristles, mingled with a few blackish ones on the dorsum. Abdomen testaceous, darker towards apex. Legs yellowish, with small blackish spots and with long whitish bristles and short blackish hairs. Fore femora pale brown with two longitudinal blackish brown streaks. Tibiae with a narrow blackish band at apex and another near base. Tibial spurs brownish towards apex. Venation of wings whitish with a few blackish streaks or bands. Some crossveins are blackish at their ends, and quite few are totally blackish (5 or 6 between R and Rs and 2 at the end of M and of Cu_{1p}; in the hindwing not so distinctly as in the forewing). All the veins and all the margins of wings with rather long pale hairs. Hind margins of the wings with short brown streaks, which are brownish haired. Forewing, 22 mm.; hindwing, 23.5 mm.

One specimen, Darwin, N.T., 3.3.1916 (G. F. Hill leg.). Coll. Tillyard.

DENDROLEON AMABILIS.

Gerstaecker, Mitth. naturw. Vereins für Neuvorp. und Rügen, 1885, p. 97.—*Dendroleon lambda* Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 52, Pl. iii., fig. 7.

One ♂, Hay, N.S. Wales, 21.1.1914 (W. W. Froggatt leg.). Coll. Froggatt. This species belongs to the genus *Dendroleon* sens. str. 2A and 3A in forewing do not coalesce, but are connected by a short crossvein. The male with a "pelote" at base of hindwing.

GLENOLEON BERTHOUDI.

Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 55, Pl. iii., fig. 8.

One ♀ from Australia, but without indication of locality (Greifswald Museum).

This species has some likeness to *Glenoleon falsus* Walk. and to *Gl. meteoricus* Gerst.; but it differs from both in having 2A and 3A in the forewing coalescing at a point.

GLENOLEON OSMYLOIDES.

Gerstaecker, Mitth. naturw. Vereins für Neuvorp. und Rügen, 1884, p. 27.—*Glenoleon annulicornis* Esb.-Peters., Proc. Linn. Soc. N.S. Wales, 1915, 72, Pl. vi., fig. 5; xii., fig. 26.

One ♀. Moree, N.S. Wales, 1917 (W. W. Froggatt leg.). Coll. Froggatt.

After having seen Gerstaecker's type-specimen I am sure that my species-name has to be placed amongst the synonyms.

MOSSEGA.

Navas, Ann. Soc. scient. Bruxelles, 1914, xxxviii., p. 248.

This genus is nearly allied to *Glenoleon*, but it differs in having the hindwing a little longer than the forewing, in possessing the costal area of the forewing biareolate from near base to pterostigma, and in possessing the 1st tarsal joint longer than 5th. 2A and 3A touch each other at a point. The character given by Navas that the area between Cu_1 and Cu_2 in forewing is partly biareolate, cannot hold good; it is an individual character only.

The genotype is *Moss. reticulata* Navas, (*loc. cit.*, p. 249) from Mittagong, N.S. Wales. This species is, however, the same as *Glenoleon indecisus* Banks (Trans. Amer. Ent. Soc., 1913, 225; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 73, Pl. xiii., fig. 25) and therefore the name *reticulata* has to be dropped.

PLATYLEON, n.g.

Legs rather long and slender. Femora and tibiae of equal length. 1st tarsal joint as long as 2nd and 3rd united; 5th the longest. Spurs as long as 1st and 2nd tarsal joints united. Prothorax subcylindrical, $1\frac{1}{2}$ times longer than broad. Abdomen (♀) shorter than the hindwing. Fore- and hindwings of almost the same length, but forewings broader than hindwings. Costal area of forewing broad and biareolate from near base to a little before pterostigma. Rs arises before the level of cubital fork. Anterior Banksian line present in both pairs of wings. 2A and 3A do not coalesce. Cu_2 undulate and ending in Cu_{1P} . Angle between Cu_{1a} and Cu_{1P} rather acute. One crossvein before origin of Rs in hindwing.

Genotype, *Platyleon froggatti*.

This genus much resembles *Mossega*, but differs as to the length of the hindwing, of the tarsal joints and of the spurs. The three genera *Glenoleon*, *Mossega* and *Platyleon* form a peculiar group within the Dendroleonini.

PLATYLEON FROGGATTI, n.sp. (Pl. xlv., fig. 3.)

Face and palpi yellowish; a broad black transverse band between the eyes, enclosing the insertions of the antennae. Vertex testaceous with a few indistinct dark spots. Antennae lost. Prothorax blackish, with rounded front angles, a transverse furrow one-third from front margin, blackish haired, and with a few indistinct pale spots. Meso- and metathorax blackish with some testaceous spots.

Abdomen blackish, with a row of pale spots at each side. Venter of abdomen testaceous. Subgenital plate large and conspicuous. Legs pale; apex of femora, tibiae and of 5th tarsal joint with a black ring. Membrane of wings hyaline; venation pale with black streaks. Apical areas with a series of crossveins. Markings sooty black. Forewing, 27 mm.; hindwing, 25 mm.; body, 20 mm.

One ♀, N.S. Wales, 20.12.1915 (W. W. Froggatt leg.). Coll. Froggatt.

I take the liberty to dedicate this handsome species to the State Entomologist, W. W. Froggatt, in honour of his great work in exploring the Australian insect-fauna.

CHRYSOLEON PUNCTATUS.

Banks, Ann. Ent. Soc. Amer., 1910, 43; Esben-Petersen, Arkiv för Zoologi, Bd. xi., 1918, p. 6, fig. 1.

One ♂, Derby, 7468. Coll. Tillyard.

CERATOLEON MJOBERGI, n.sp. (Pl. xlv., fig. 4.)

Palpi yellowish. Face and mouthparts yellowish. A broad blackish band between the eyes, enclosing the insertions of the antennae; above this band a narrow yellowish transverse streak. Vertex blackish-brown. The two basal joints of antennae brown (the rest of antennae lost). Prothorax as long as (or a little longer than) broad, blackish, with a transverse furrow one-third from front margin, with a short pale median longitudinal streak anteriorly, and with two pale indistinct spots at each side; meso- and metathorax blackish. Abdomen short, black. Legs rather stout, brown; basal part and underside of femora yellowish; hind tibiae yellowish with a black ring at apex; hind tarsi yellowish, apex of 5th tarsal joint blackish. 1st tarsal joint as long as 2nd and 3rd joints united; 5th joint the longest. No spurs. Wings rather long and with acute apex. Membrane of forewing brownish with hyaline spots, and with a large central hyaline area in the disc; this area encloses a brown spot. Pterostigma brownish. Membrane of hindwing hyaline in the basal half; a broad blackish brown cross-band below pterostigma; apical part lactaceous. Basal two-fifths of costal area in forewing biareolate. Basal half of radial area with two or more rows of irregular cells. The area between the stem of Cu_1 and of Cu_2 contains also two or more rows of irregular cells. Anterior and posterior Banksian lines present in both pairs of wings; in the hindwing the posterior line is only indicated. Venation blackish: in the forewing with some whitish interruptions. Apical area of forewing with a few crossveins just beyond pterostigma; apical area of hindwing without crossveins. At base of hindwing a "pelote" in the male sex. Forewing, 22 mm.; hindwing, 21 mm.; body, 18 mm.

One ♂, N.W. Australia, January (Dr. E. Mjöberg leg.). Stockholm Museum.

The specimen of this peculiar species comes from the material brought home by Dr. E. Mjöberg from his expedition to Australia, 1910-1913.

AUSTROGYMNOCNEMIA AUSTRALIS, n.sp. (Pl. xlv., fig. 5.)

Palpi and face yellowish. Tip of apical joint of labial and maxillary palpi bifurcate. Between eyes a blackish transverse band enclosing the insertions of the antennae. Vertex strongly raised, reddish-yellow; a blackish transversely placed line in front, three blackish spots at hind margin, and on top a transverse dark streak. Antennae dark brown, yellowish annulated; basal joint yellowish above; apical part of antennae lost. Prothorax as long as broad, blackish, with yellowish spots and with several irregular reddish-yellow streaks ending abruptly.

Meso- and metathorax blackish with small reddish-yellow spots. Abdomen black, apical part of dorsum paler. Legs brown with long white hairs; hind tibiae and hind tarsal joints paler, and with a dark ring at apex. Femora, tibiae and tarsi of almost equal length. 1st tarsal joint of foreleg as long as 2nd and 3rd joints united, of hind legs hardly as long as 2nd and 3rd joints together; 5th tarsal joint a little longer than 1st joint. Spurs microscopic. Wings long and slender, acutely pointed at apex. Membrane hyaline; venation pale with black dots and streaks. Anterior and posterior Banksian lines present in both pairs of wings. Pterostigma reddish-yellow with a blackish spot internally. Costal area in both pairs of wings rather narrow, and with simple crossveins. Forewing, 21-22 mm.; hindwing, 18-19 mm.; body, 14-15 mm.

One ♀, Hay, N.S. Wales, 20.1.1916 (W. W. Froggatt leg.). Coll. Froggatt. One ♀, N.W. Australia (Dr. E. Mjöberg leg.). Stockholm Museum.

This species has much likeness to *A. bipunctata* Esb.-P., but its more pointed wings and its narrower costal area of forewing with the simple costal veins separate it rather easily from that species.

AUSTROGYMNOCNEMIA PENTAGRAMMA. (Pl. xlv., fig. 7.)

Gerstaecker, Mitth. naturw. Vereins für Neuorp. und Rügen, 1884, 34.

Face yellowish. Palpi brownish-yellow. A black transverse band between the eyes, enclosing the insertions of the antennae. Vertex somewhat reddish-yellow with blackish spots. Antennae blackish-brown, narrowly yellowish, annulated; the club inconspicuous. Prothorax a little longer than broad, with rounded front angles and with a transverse furrow one-third from front margin; blackish-brown with five short longitudinal yellowish-red streaks along the front border, and with six along the posterior margin. Meso- and metathorax blackish-brown with pale spots, and with pale hind borders. Abdomen blackish; segments with narrow pale hind margin dorsally. Abdomen much shorter than hindwings. Legs pitchy brown. Underside of femora and a band near tip yellowish. Fore- and middle tibiae with two yellowish bands on their outer side; hind tibiae on their outer side yellowish, with the exception of a dark band at apex. Tarsal joints yellowish at their base. Legs short. Femora and tibiae of almost the same length; tarsi as long as two-thirds of tibiae. 1st tarsal joint a little longer than 5th. Venation whitish with numerous blackish streaks. Most crossveins blackish; in the forewing they are mostly brownish shaded. Pterostigma whitish with a large dark brown spot internally. Forewing, 25 mm.; hindwing, 23 mm.

Gerstaecker's type-specimen is from Peak Downs.

AUSTROGYMNOCNEMIA TIPULARIA. (Pl. xlv., fig. 6.)

Gerstaecker, Mitth. naturw. Vereins für Neuorp. und Rügen, 1885, 102.

Face and palpi yellowish-white; a shining blackish transverse band between the eyes, enclosing the insertions of the antennae. Above this band an ivory white narrow transverse streak. Vertex somewhat raised, reddish-brown, with indistinct darker spots. Along the eyes an ivory white narrow streak posteriorly. Antennae long and slender, brownish, and with rather broad whitish annulations. Club blackish, not annulated. Prothorax about twice as long as broad, with rounded front angles, narrowly yellowish on margins, and with a broad transverse furrow one-third from anterior margin; reddish-brown with two longitudinal irregular pale streaks, and with a narrow pale line at each side close to the lateral blackish margin. Meso- and metathorax blackish with pale spots. Abdomen blackish, shorter than the hindwings; dorsum of 3rd, 4th and 5th

abdominal segments each with a yellowish spot near base and a smaller one in their middle. Legs very long and slender, yellowish. Apex of femora and two narrow longitudinal lines on their upperside pitchy brown. Apex of tibiae with a small brownish band; another brownish band near base of fore and middle tibiae. Fore tarsi, and the 3rd, 4th and 5th tarsal joints of middle and hind tibiae blackish-brown. Claws tiny, almost straight, and pale brown. Fore legs longer and slenderer than the two other pairs. Femora and tibiae of equal length. Fore tarsi very tiny and as long as fore tibiae. Middle and hind tarsi hardly as long as their tibiae. The tarsal joints of fore tarsus almost equal in length; 1st the longest and 4th the shortest. 4th joint of intermediate and hind tarsi much shorter than the other joints. Legs with long whitish bristles. Venation whitish with brown streaks. Several crossveins totally black. Pterostigma yellowish with a large brown spot internally. Forewing, 18.5 mm.; hindwing, 17 mm.

Gerstaecker's type-specimen is from Peak Downs.

At present six species are known of the genus *Austrogymnocyemia*, but *tipularia* Gerst. and *maculata* Till. form a peculiar group or sub-genus owing to the fact that 2A and 3A in forewing are not free, but are touching each other at one point.

NEOPLECTRON.

Navas, *Memorias*, Barcelona, xi., 1914, 115.

This genus is closely allied to *Protoplectron* Gerst. Costal area of forewing biareolate in its first third; the area between Cu_1 and posterior margin of hindwing is also biareolate. In *Protoplectron longitudinale* Till. the same area in the hindwing is biareolate, but the costal area in the forewing of this species is biareolate in its basal three-fifths.

The genotype is *Neopl. inversum* Navas. (*loc. cit.*, 116, fig. 5; Vienna Museum).

I have examined and photographed the type-specimen (Pl. xlv., fig. 8).

STENOGYMNOCNEMIA, n.g.

Antennae long and slender; prothorax a little longer than broad. Legs long and slender; tibiae without spurs. Wings very long, narrow and with acute tips. Hindwing as long as forewing. In forewing Rs arises beyond the level of cubital fork. Cu_2 long and almost straight. 2A and 3A coalesce for some distance. In hindwing one crossvein before Rs. M_{2a} straight, parallel to the hind margin. Apical area in both pairs of wings with a series of crossveins. No Banksian lines.

Genotype. *Myrmeleon malus* (Pl. xlv., fig. 9), Walker, *Catalogue of Neuropterous Insects*, 1853, 393.

DISTOLEON SOMMOLENTUS. (Pl. xlv., fig. 10.)

Gerstaecker, *Mitth. naturw. Vereins für Neuvorp. und Rügen*, 1884, 13.—*Distoleon verticalis*. Banks, *Ann. Ent. Soc. Amer.*, 1910, 42; Esben-Petersen, *Arkiv för Zoologi*, Bd. xi., 1918, 14, Pl. 1, fig. 5.—*Formicaleo thoreyi*, Navas, *Revista Real Acad. Madrid*, 1914, 475, fig. 6.

A small series from Cooloom, Queensland, March, 1921 (Tage Scheibel leg.). Coll. Esben-Petersen.

I have compared the type-specimen of *sommoilentus* with specimens of *audax* Walker from Java and Philippine Islands, but I cannot find any difference between the specimens.

FORMICALEO BREVIUSCULUS. (Pl. xlvi., fig. 11.)

Myrmeleon brevisculus, Gerstaecker, Mitth. naturw. Vereins für Neuvorp. und Rügen, 1885, 100.—*Formicaleo waterhousei*, Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 63, Pl. v., fig. 14.

Two specimens are present, but with some doubt I refer one of them to the Gerstaeckerian species.

One ♀, Hay, N.S. Wales, 5.2.1911 (W. W. Froggatt leg.); Coll. Froggatt. One ♀, Hay, 20.1.1916 (W. W. Froggatt leg.).

FORMICALEO SEPTUS. (Pl. xlvi., fig. 12.)

Gerstaecker, Mitth. naturw. Vereins für Neuvorp. und Rügen, 1885, 91.

Palpi, clypeus and labrum yellowish; vertex and the rest of the face blackish-brown with a narrow pale zigzag transverse line above the antennae and four pale spots posteriorly (the two median spots close to each other). Face with a dense whitish pilosity, and with a transverse row of long whitish hairs along the upper margin of clypeus. The antennae blackish-brown, narrowly annulated with yellowish; the club yellowish-brown, narrowly annulated with blackish. Antennae longer than the thorax. Thorax pitchy black. Prothorax with three pale longitudinal streaks, the median ones very narrow. Abdomen hardly as long as the hindwing, blackish; the segments with narrow pale hind margin dorsally; third and fourth segments with a yellowish-brown spot in their middle dorsally. Legs pale; fore and intermediate femora darker in their apical part, and hind femora with a dark band at apex. Tibiae with a dark band at apex. Third, fourth and apex of fifth tarsal joint black. Legs with numerous black spots, with whitish hairs and with blackish bristles. Venation yellowish-white with numerous dark streaks; several crossveins totally dark. Pterostigma whitish, with a dark spot internally. Forewing, 23 mm.; hindwing, 22 mm.

Gerstaecker's type-specimen is from Peak Downs.

FORMICALEO CONGESTUS. (Pl. xlvi., fig. 13.)

Myrmeleon congestus, Gerstaecker, Mitth. naturw. Vereins für Neuvorp. und Rügen, 1885, 99.

Palpi, labrum and clypeus yellowish-brown; vertex and the rest of face jet-black, not glossy. Antennae blackish-brown, narrowly annulated with yellowish. Thorax black. Prothorax broader than long, a transverse furrow one-third from the front margin; on the disc three irregular pale longitudinal streaks; front angles rounded and narrowly margined with yellowish. Abdomen shorter than hindwing, blackish, and the segments with very narrow pale hind border dorsally. 7th abdominal segment with a pale, rather large, triangular, and rather pointed subgenital plate ventrally. Legs rather short and stout, pitchy brown, whitish haired and with blackish bristles. Fore femora basally, hind tibiae dorsally and 1st tarsal joint basally whitish. 1st tarsal joint as long as 2nd and 3rd united; 5th joint the longest. Spurs somewhat curved, as long as 1st and 2nd joints together. Venation whitish with brown streaks. Most crossveins totally brown, and a large number of them in the apical half of the forewing brownish shaded. Pterostigma indistinct with a brownish spot internally. Forewing, 23 mm.; hindwing, 22 mm.

Gerstaecker's type-specimen (♀) is from Peak Downs.

FORMICALEO HILLI, n.sp. (Pl. xlvi., fig. 14.)

Palpi yellowish, face yellowish with a reddish longitudinal median streak and with a transversely placed row of long whitish hairs. Vertex and upper part of

face brown; on top two parallel elevated transverse ridges. Vertex with a short pale median streak posteriorly. Basal joint of antennae yellowish, second joint brown (the rest of antennae lost). Prothorax a little shorter than broad, brown, with a pale longitudinal median streak and with a transverse furrow one-third from anterior margin. Meso- and metathorax brown with an indistinct pale median line and with pale margins posteriorly. Abdomen brown; third and following segments with a broad yellowish ring anteriorly. Legs short and stout, dark brown; basal part of femora and hind tibiae yellowish. 1st tarsal joint short, but longer than each of 2nd, 3rd and 4th; 5th joint longer than 1st-4th joints united. Spurs strong and curved, almost as long as 1st-4th tarsal joints of forelegs, but only as long as 1st-2nd joints of hindlegs. Wings long, gradually broadened from base towards apex which is rather obtusely pointed, especially in forewings. Membrane hyaline. Venation pale, with dark dots and streaks. No Banksian lines. Apical area in both pairs of wings with a few crossveins. Pterostigma yellowish with a brown spot internally; this spot is very small in the hindwing. Rs arises almost in the middle of the forewing. Forewing, 28 mm.; hindwing, 29 mm.; body, 22 mm.

One ♀, Darwin (G. F. Hill leg.). Coll. Tillyard.

ESCURA DIVERGENS. (Pl. xlvii., fig. 15.)

Navas, Revista Real Acad. Madrid, 1914, 468, fig. 3.

The type-specimen, kept in Vienna Museum, is labelled "Australia."

HETEROLEON APICALIS, n.sp. (Pl. xlvii., fig. 17.)

Slender. Face and palpi yellowish. Vertex brown to below the insertions of the antennae; posterior angles of vertex and a narrow circle round each eye yellowish. Antennae as long as head and thorax together, brown with narrow yellowish sutures, strongly clavate, apex of club obtuse. Prothorax a little longer than broad, yellowish, with two brown longitudinal median streaks, separated only by a yellowish line; at the posterior angles a short brown narrow lateral streak. Meso- and metathorax dark brown with an irregular yellowish spot above the base of each wing. Abdomen blackish; each segment narrowly margined with yellowish dorsally; pleurae yellowish. Legs rather strong, yellowish; femora with long whitish bristles; tibiae with long blackish ones. Tip of 5th tarsal joint black. 1st tarsal joint longer than 2nd or 3rd, but shorter than 5th. Spurs almost straight and about as long as 1st, 2nd and 3rd tarsal joints united. Wings rather slender, with acute apex. Membrane quite hyaline. Venation whitish with exception of most of the longitudinal veins which have blackish streaks; costal crossveins and a few crossveins between R and Rs are partly blackish. Veins whitish haired; margins of wings blackish ciliate. Pterostigma yellowish-brown. A brown streak along the row of gradate veins in apical part of forewing. A few crossveins in apical area of both pairs of wings present. Posterior Banksian line in forewing indicated. 2A and 3A coalesce for some distance. Forewing, 22 mm.; hindwing, 21 mm.; body, 17 mm.

One ♀, Cunderdin, W.A., February, 1914. Coll. Tillyard.

HETEROLEON PULCHELLUS, n.sp. (Pl. xlvii., fig. 16.)

Head testaceous; above the antennae which are lost, an irregular blackish transverse band; on the top of vertex two oblong transversely placed brown spots. Prothorax as long as broad or a little longer, testaceous, with a brown longitudinal median streak, narrowed at the transverse furrow, and with a wide

-brownish-black lateral streak posteriorly. Meso- and metathorax testaceous with three longitudinal irregular blackish streaks cut off abruptly. Abdomen brown (discoloured in the type-specimen). Legs rather short and stout, testaceous; tibiae hardly as long as femora; tarsi as long as tibiae. Basal tarsal joint as long as 2nd and 3rd together; 2nd, 3rd and 4th almost of equal length; 5th as long as 1st-4th united. Spurs almost straight, a little longer than 1st-3rd joints united. Wings long, narrow and with acute tips; membrane hyaline; venation whitish with a few dark dots and streaks; ground-colour of Sc and R strongly yellowish; the subcostal area tinged with yellow. Anterior Banksian line hardly indicated in the forewing, not present in hindwing; posterior Banksian line in forewing distinct. Apical area with a series of crossveins which are strongly shaded brownish in the forewing. Cu_1 in the forewing strongly dotted with brownish. The outer apical series of crossveins in both pairs of wings shaded brownish in their posterior part. Forewing, 23 mm.; hindwing, 22 mm.; body, 21 mm.

One ♀, Roebourne, W.A., March, 1914. Coll. Tillyard.

MYRMELEON CROCEICOLLIS.

Gerstaecker, Mitth. naturw. Vereins für Neuorp. und Rügen, 1884, 30; Australia.—*Myrmeleon loweri*, Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 65, Pl. vi., fig. 15.

Tillyard's species is the same as that of Gerstaecker.

One ♀, Roebourne, W. Australia, April, 1914. Coll. Tillyard.

MYRMELEON COMPTUS.

Gerstaecker, Mitth. naturw. Vereins für Neuorp. und Rügen, 1885, 94; Peak Downs.—*Myrmeleon croceus*, Esben-Petersen, Arkiv för Zoologi, Bd. xi., 1918, 20, Pl. 2, fig. 1; Kimberley district.

I find now, after having seen the type-specimen of *comptus*, that my *croceus* is the same.

The type-specimen is a mature one, and I give here some supplementary notes to my description:—Antennae jet-black. Labrum blackish-brown. Vertex with two short yellowish longitudinal streaks posteriorly.

MYRMELEON NIGROMARGINATUS.

Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1917, 209, Pl. xi., fig. 5; Arkiv för Zoologi, Bd. xi., 1918, 21.

One specimen from Roebourne, W. Australia, March, 1914. Coll. Tillyard.

DICTYOLEON, n.g.

Antennae clavate, almost as long as head and thorax together. Prothorax broader than long. Abdomen (♀) shorter than hindwing. Legs rather short; femora, tibiae and tarsi of equal length; 1st tarsal joint as long as 2nd and 3rd united; 2nd, 3rd and 4th joints short; 5th joint as long as 2nd, 3rd and 4th united. Spurs tiny and almost straight, a little longer than 1st tarsal joint. Wings of almost equal breadth from base to pterostigma; tip of hindwing more acutely pointed than that of forewing. Hindwing narrower than forewing. Costal area of forewing broad; three rows of cells from near base to a little before pterostigma; one series of cells in costal area of hindwing. Apical area of both pairs of wings with several irregularly placed crossveins. In forewing Rs arises a little beyond the level of cubital fork; cubital fork very acute. Cu_2 long,

almost straight; its apical part running close to the hindmargin of the wing. 2A and 3A coalesce for a very long distance. In the hindwing Rs arises further out than the level of median fork. Median fork very acute. 1A very short and inconspicuous; 2A hardly visible. Venation of wings very dense. Posterior Banksian lines present.

Genotype, the species described below.

DICTYOLEON NERVOSUS, n.sp. (Pl. xlvi., fig. 18.)

Face yellowish. Palpi brownish-black with yellowish sutures. Between eyes a transverse blackish shining band, enclosing the insertions of the antennae. Vertex somewhat raised, testaceous; its top with numerous small tubercles; along anterior margin a transverse row of two blackish median spots and two laterally placed blackish streaks; along hind margin another row, containing two blackish triangular median spots and two pairs of laterally placed parallel blackish streaks. Antennae brownish with paler sutures; club darker; first and second antennal joints blackish shining; dorsum of first joint yellowish. Prothorax brown, with rounded front angles; lateral margins and front angles narrowly margined with yellowish; a narrow yellowish longitudinal median line and a broader indistinct yellowish streak between the median line and the lateral margins. Meso- and metathorax brown, with paler spots and streaks above and below. Abdomen brown, paler below; the abdominal segments with a large yellowish triangular spot at the front margin dorsally. Tip of abdomen below with a blackish subgenital plate, strongly blackish haired; behind the plate a pair of blackish and strongly haired prolongations. Legs of moderate size, femora yellowish, blackish towards tip; middle part of tibiae, especially of hind tibiae, yellowish; apex of tarsal joints dark. Wings without markings. Membrane hyaline. Venation whitish with numerous blackish streaks. Pterostigma whitish; in forewing with an indistinct blackish spot internally. Forewing, 31 mm.; hindwing, 31 mm.; body, 21 mm.

One ♀, Fiji Islands, 1.9.22 (H. W. Simmonds leg.). Imperial Bureau of Entomology, British Museum. I consider this species to represent a peculiarly specialised group within the Myrmeleonini.

List of hitherto described species of Myrmeleonidae from Australia.

Where an asterisk has been put before a name I have seen material of the species.

I. ARCHAEMYRMELEONIDA.

Esben-Petersen, Entomologiske Meddelelser, København, xii., 1918, 100; xiii., 1920, 194.

Stilbopteryx.

Newman, Entom. Mag., v., 1838, 399; v.d. Weele, Cat. Coll. Selys, Aescalaphiden, 1908, 21.

1. *costalis*, Newman, *loc. cit.*, p. 400; v.d. Weele, *loc. cit.*, p. 22; Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 69.
- *2. *napoleo* Lefebvre, Guérin, Mag. Zool., 1842, 10, pl. 92, ♂; *dromedaria*, Tillyard, *loc. cit.*, 1916, 67, figs. 1, 2, 3.
3. *linearis*, Navas, Entom. Rundschau, 1911, 12, fig. 1.

II. NEOMYRMELEONIDA.

Esben-Petersen, *loc. cit.*, 1918, 100; 1920, 194.

Periclystus.

Gerstaecker, Mitt. naturw. Vereins Neuvorpom. und Rügen, 1887, 103; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 67.

- *1. *circuter*, Walker, Cat. Neur. Ins. Brit. Mus., 1853, 400; Esben-Petersen, *loc. cit.*, 1915, 68, Pl. x., fig. 17; (*callipeplus* Gerstaecker, *loc. cit.*, 1887, 107).
- *2. *laceratus*, Gerstaecker, *loc. cit.*, 1887, 105; Esben-Petersen, *loc. cit.*, 1915, 68, Pl. x., fig. 18.
- *3. *aureolatus*, Tillyard, *loc. cit.*, 1916, 50, Pl. ii., fig. 3.

Froggattisca.

Esben-Petersen, *loc. cit.*, 1915, 64.

- *1. *pulchella*, Esben-Petersen, *loc. cit.*, 1915, 65, Pl. ix., fig. 14.

Dendroleon.

Brauer, Novara-Expedition, Neuroptera, 1866, 42; Esben-Petersen, *loc. cit.*, 1915, 70.

- *1. *amabilis*, Gerstaecker, *loc. cit.*, 1885, 97; (*lambda* Tillyard, *loc. cit.*, 1916, 52, Pl. iii., fig. 7).
- *2. *longipeunis*, Esben-Petersen, *loc. cit.*, 1915, 70, Pl. xi., fig. 20.
- 3. *dumigani*, Tillyard, *loc. cit.*, 1916, 53, Pl. iii., fig. 6.

Glenoleon.

Banks, Trans. Amer. Ent. Soc., 1913, 223; Esben-Petersen, *loc. cit.*, 1915, 71; Arkiv för Zoologi, Vol. xi., 1918, 7.

- *1. *pulchellus*, Rambur, Hist. nat. Ins. Néuroptères, 1842, 408.
- *2. *falsus*, Walker, Cat. Neur. Ins. Brit. Mus., 1853, 303; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 73, Pl. xi., fig. 21.
- *3. *meteoricus*, Gerstaecker, *loc. cit.*, 1884, 25; Esben-Petersen, *loc. cit.*, 1915, 73, Pl. xii., fig. 22.
- *4. *dissolutus*, Gerstaecker, *loc. cit.*, 1884, 26; Esben-Petersen, *loc. cit.*, 1915, 73, Pl. xii., fig. 23.
- *5. *osmyloides*, Gerstaecker, *loc. cit.*, 1884, 27; (*annulicornis* Esben-Petersen, *loc. cit.*, 1915, 72, Pl. vi., fig. 5; Pl. xiii., fig. 26).
- 6. *stigmatus*, Banks, Ann. Ent. Soc. Amer., 1910, 40; Trans. Amer. Ent. Soc., 1913, 224.
- *7. *radialis*, Banks, *loc. cit.*, 1913, 224; Esben-Petersen, *loc. cit.*, 1915, 72, Pl. xii., fig. 24.
- *8. *berthoudi*, Tillyard, *loc. cit.*, 1916, 55, Pl. iii., fig. 8.
- *9. *aurora*, Tillyard, *loc. cit.*, 1916, 56, Pl. iv., fig. 9.
- 10. *roseipennis*, Tillyard, *loc. cit.*, 1916, 57.
- *11. *annulatus*, Esben-Petersen, Arkiv för Zoologi, xi., 1918, 7, Pl. i., fig. 2.

Glenurus.

Hagen, Stett. ent. Zeitung, 1866, 372.

- 1. *bicarunculatus*, Brauer, Verh. zool.-bot. Gesellsch., 1868, 186. Pelew Islands.

Mossega.

Navas, Ann. Soc. scient. Brux., xxxviii., 1914, 248.

- *1. *indecisa* Banks, Trans. Amer. Ent. Soc., 1913, 225; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 73, Pl. xiii., fig. 25; (*reticulata* Navas, *loc. cit.*, 1914, 249).

Platyleon, n.g.

- *1. *froggatti*, n.sp.

Chrysolcon.

Banks. Ann. Ent. Soc. Amer., 1910, 43; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 5.

- *1. *punctatus*, Banks, *loc. cit.*, 1910, 43; Esben-Petersen, *loc. cit.*, 1918, 6, fig. 1.

Ceratoleon.

Esben-Petersen. Proc. Linn. Soc. N.S. Wales, 1917, 207.

- *1. *brericornis*, Esben-Petersen. *loc. cit.*, 1917, 207, Pl. x., fig. 3; Pl. xi., fig. 3A.

- *2. *mjöbergi*, n.sp.

Austrogymnoecemia.

Esben-Petersen, *loc. cit.*, 1917, 206.

- *1. *bipunctata*, Esben-Petersen. *loc. cit.*, 1915, 63, Pl. vi., fig. 3; Pl. ix., fig. 13.
 *2. *pentagramma*, Gerstaecker. *loc. cit.*, 1884, 34.
 *3. *tipularia*, Gerstaecker. *loc. cit.*, 1885, 102.
 *4. *interrupta*, Esben-Petersen. *loc. cit.*, 1915, 64, Pl. vi., fig. 4; Pl. viii., fig. 12.
 5. *maculata*, Tillyard. *loc. cit.*, 1916, 57, Pl. iv., fig. 11.
 *6. *australis*, n.sp.

Anomaloplectron.

Esben-Petersen, Arkiv för Zoologi, xi., 1918, 8.

- *1. *lineatipenne*, Esben-Petersen, *loc. cit.*, 1918, 9, Pl. i., fig. 3.

Acanthoplectron.

Esben-Petersen. *loc. cit.*, 1918, 10.

- *1. *tenellum*, Esben-Petersen, *loc. cit.*, 1918, 11, Pl. i., fig. 4.

Compsoleon.

Banks, Trans. Amer. Ent. Soc., xxiv., 1913, 223.

1. *occultus*, Walker. Cat. Neur. Ins. Brit. Mus., 1853, 386; Banks, *loc. cit.*, 1913, 223.

Adeloplectron, n.g.

- *1. *testaceum*, n.sp.

Protoplectron.

Gerstaecker. *loc. cit.*, 1884, 15; Banks, Ann. Ent. Soc. Amer., iii., 1910, 40; Esben-Petersen. Proc. Linn. Soc. N.S. Wales, 1915, 66; 1917, 204.

- *1. *venustum*, Gerstaecker. *loc. cit.*, 1884, 16; Esben-Petersen. *loc. cit.*, 1915, 66, Pl. ix., fig. 15; (*plicatum* Navas. Revista Real Acad., Madrid, 1914, 466, fig. 2).
 *2. *pallidum*, Banks, Ann. Ent. Soc. Amer., 1910, 41; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 11.
 3. *eremiae*, Tillyard. *loc. cit.*, 1916, 49, Pl. ii., fig. 4.
 *4. *striatellum*, Esben-Petersen. Proc. Linn. Soc. N.S. Wales, 1917, 204, Pl. x., fig. 1.
 *5. *gerstaeckeri*, Esben-Petersen. Arkiv för Zoologi, xi., 1918, 11, Pl. i., fig. 6.

Neoplectron.

Navas, Memorias, Barcelona, xi., 1914, 115.

- *1. *inversum*, Navas. *loc. cit.*, 116, fig. 5.
 2. *longitudinale*, Tillyard, *loc. cit.*, 1916, 48, Pl. ii., fig. 5.

Pseudoformicaleo.

v.d. Weele. Notes Leyden Mus., xxi., 1909, 25; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 67; 1917, 204.

- *1. *nubeculus*, Gerstaecker, *loc. cit.*, 1885, 101; (= *jacobsoni*, v.d. Weele, *loc. cit.*, 1909, 25, Pl. ii., fig. 8; *costatus*, Banks, Ann. Ent. Soc. Amer., 1910, 41; *caligatus*, Navas, Revue Russe d'Ent., 1912, 113; *ignobilis*, Navas, Memorias, 1914, 115; *aesthenicus*, Navas, Insecta, 1914, 140).

Mjöbergia.

Esben-Petersen, Arkiv för Zoologi, xi., 1918, 13.

- *1. *fulviguttata*, Esben-Petersen, *loc. cit.*, 1918, 13, Pl. i., fig. 7.

Macronemurus.

Costa, Fauna Napol. Myrm., ii., 1855, 8.

1. *abditus*, Walker, Catalogue, 1853, 360.

Stenogymnocnemia, n.g.

1. *malus*, Walker, Catalogue, 1853, 395.

Eidoleon.

Esben-Petersen, Arkiv för Zoologi, xi., 1918, 15.

- *1. *bistrigatus*, Rambur, Hist. nat. Ins. Névroptères, 1842, 391; (*striola*, Walker, Catalogue, 1853, 340; *perjurus*, Walker, *loc. cit.*, 340; *torvus*, Walker, *loc. cit.*, 341; *violentus*, Walker, *loc. cit.*, 348).
- *2. *nigrosignatus*, Tillyard, *loc. cit.*, 1916, 64, Pl. vi., fig. 17; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 15.

Distoleon.

Banks, Ann. Ent. Soc. Amer., iii., 1910, 40; Esben-Petersen, *loc. cit.*, 1918, 15.

- *1. *sommolentus*, Gerstaecker, *loc. cit.*, 1884, 13; (*verticalis*, Banks, *loc. cit.*, 42; Esben-Petersen, *loc. cit.*, 1918, 14, Pl. i., fig. 5; *thoreyi*, Navas, Rev. Real Acad. Madrid, 1914, 475, fig. 6).
2. *nefarius*, Navas, Revue Russe d'Entom., x., 1910, 190, Australia.

Formicaleo.

Leach, Edinb. Encycl., ix., 1815, 138.

- *1. *brevisculus*, Gerstaecker, *loc. cit.*, 1885, 100; (*waterhousei*, Tillyard, *loc. cit.*, 1916, 63, Pl. v., fig. 14).
- *2. *septus*, Gerstaecker, *loc. cit.*, 1885, 91.
- *3. *congestus*, Gerstaecker, *loc. cit.*, 1885, 99.
4. *wilsoni*, MacLachlan, Ann. Mag. Nat. Hist., x., 1892, 178. Hawaiian Islands.
5. *äüpersus*, Banks, Ann. Ent. Soc. Amer., iii., 1910, 43.
6. *subpunctulatus*, Brauer, Verh. zool.-bot. Gesellsch., 1869, 16. Fiji Islands.
7. *vafer*, Walker, Catalogue, 1853, 345; (*desperatus*, Walker, *ibid.*, 359; MacLachlan, Journ. Linn. Soc. Lond., 1869, 278; *perniciosus*, Walker, *loc. cit.*, 360 (without locality); MacLachlan, *loc. cit.*, 278; *melefidus*, Walker, *loc. cit.*, 364; MacLachlan, *loc. cit.*, 278).
8. *insomnis*, Walker, *loc. cit.*, 384 (without locality; Australia?).
- *9. *canifrons*, Navas, Rev. Real Acad. Madrid, 1914, 473, fig. 5; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1917, 208, Pl. xi., fig. 4.
10. *ballievi*, Navas, *loc. cit.*, 1914, 475. Honolulu.

11. *hyalinus*, Tillyard, *loc. cit.*, 1916, 62, Pl. vi., fig. 16.
 *12. *hilli*, n.sp.

Escura.

Navas, *loc. cit.*, 1914, 468; (*Alloformicaleon*, Esben-Petersen, *loc. cit.*, 1915, 69).

- *1. *divergens*, Navas, *loc. cit.*, 1914, 468, fig. 3.
 *2. *australis*, Esben-Petersen, *loc. cit.*, 1915, 69, Pl. vi., fig. 6; Pl. xi., fig. 19.

Brachyleon.

Tillyard, *loc. cit.*, 1916, 58.

- *1. *darwini*, Tillyard, *loc. cit.*, 1916, 59, Pl. iv., fig. 10.

Heteroleon.

Esben-Petersen, Arkiv för Zoologi, xi., 1918, 16.

- *1. *exilis*, Esben-Petersen, *loc. cit.*, 1918, 16, Pl. iii., fig. 1.
 *2. *marginalis*, Banks, Ann. Ent. Soc. Amer., 1910, 44; Esben-Petersen, *loc. cit.*, 1918, 17, Pl. ii., fig. 2.
 *3. *apicalis*, n.sp.
 *4. *pulchellus*, n.sp.

Nelees.

Navas, Broteria, 1912, 31.

1. *strigatus*, Navas, Rev. Real Acad. Madrid, 1914, 471, fig. 4.

Stenoleon.

Tillyard, *loc. cit.*, 1916, 60.

1. *fieldi*, Tillyard, *loc. cit.*, 1916, 60, Pl. v., fig. 13.

Xantholëon.

Tillyard, *loc. cit.*, 1916, 61.

- *1. *helmsi*, Tillyard, *loc. cit.*, 1916, 61, Pl. v., fig. 12.

Myrmeleonellus.

Esben-Petersen, Arkiv för Zoologi, xi., 1918, 17.

- *1. *pallidus*, Esben-Petersen, *loc. cit.*, 1918, 18, Pl. ii., fig. 3.

Leptoleon.

Esben-Petersen, *loc. cit.*, 1918, 18.

- *1. *regularis*, Esben-Petersen, *loc. cit.*, 1918, 19, Pl. iii., fig. 3.

Myrmeleon.

Linné, Syst. Nat., xii., 913.

1. *acer*, Walker, Catalogue, 1853, 348; (*solens*, Walker, *ibid.*, 367; *inopinus*, Walker, *ibid.*, 368; *malignus*, Walker, *ibid.*, 380; *hostilis*, Walker, *ibid.*, 384; *exsanguis*, Walker, *ibid.*, 388; MacLachlan, Tijdschr. voor Entom., xviii., 1875, 7).
 *2. *croceicollis*, Gerstaecker, *loc. cit.*, 1884, 30; *loweri*, Tillyard, *loc. cit.*, 1916, 65, Pl. vi., fig. 15; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 21.
 *3. *comptus*, Gerstaecker, *loc. cit.*, 1885, 94; (*croceus*, Esben-Petersen, *loc. cit.*, 1918, 20, Pl. ii., 1).
 *4. *uniseriatus*, Gerstaecker, *loc. cit.*, 1884, 29.
 *5. *pictifrons*, Gerstaecker, *loc. cit.*, 1885, 96; Tillyard, *loc. cit.*, 1917, 544.
 *6. *diminutus*, Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 62, Pl. vi., fig. 2; Pl. viii., fig. 11.
 *7. *nigromarginatus*, Esben-Petersen, *loc. cit.*, 1917, 209, Pl. xi., fig. 5; Arkiv för Zoologi, xi., 1918, 21.
 8. *neocaledoniensis*, Navas, Memorias, 1912, 391. New Caledonia.

Dietyoleon, n.g.

- *1. *nervosus*, n.sp. Fiji Islands.

Callistoleon.

Banks, Ann. Ent. Soc. Amer., iii., 1910, 42; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 62.

- *1. *erythrocephalus*, Leach, Zool. Miscell., i., 70, Pl. xxx.; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 21, Pl. iii., fig. 2; (*guttatus*, Rambur, Hist. nat. Ins. Névroptères, 1842, 409; MacLachlan, Ann. Soc. Ent. Belg., 1873, 140).
- *2. *illustris*, Gerstaecker, loc. cit., 1885, 92; 1887, 111; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 62, Pl. viii., fig. 10.

Weeleus.

Navas, Memorias, 1912, 172.

1. *acutus*, Walker, Catalogue, 377; Navas, loc. cit., 1912, 173, fig. 18. New Zealand.

Mestressa.

Navas, Rev. Real Acad. Madrid, 1914, 464.

- *1. *subfasciata*, Banks, Proc. Ent. Soc. Wash., 1913, 141; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 60, Pl. xiii., fig. 27; Arkiv för Zoologi, xi., 1918, 22, Pl. iii., fig. 5; (*miseria*, Navas, loc. cit., 464, fig. 1).

Acanthaclisis.

Rambur, Hist. nat. Ins. Névroptères, 1842, 378.

- *1. *fundata*, Walker, Catalogue, 320; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 61, Pl. viii., fig. 8; Arkiv för Zoologi, xi., 1918, 22.
- *2. *subtendens*, Walker, Catalogue, 321; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 61, Pl. vii., fig. 7; Arkiv för Zoologi, xi., 1918, 22; (**conspurecata*, Gerstaecker, loc. cit., 1885, 88).
- *3. *fulva*, Esben-Petersen, Entom. Mitteil., 1912, 269, fig. 3; Proc. Linn. Soc. N.S. Wales, 1915, 60; Tillyard, *ibid.*, 1916, 67.
4. *peterseni*, Tillyard, Proc. Linn. Soc. N.S. Wales, 1916, 66, Pl. i., fig. 2.

Cosina.

Navas, Broteria, 1912, 47; Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1917, 210; Arkiv för Zoologi, xi., 1918, 22.

- *1. *maclachlani*, v.d. Weele, Notes Leyden Mus., xiv., 1904, 210; Navas, Broteria, 1912, 47; Esben-Petersen, Arkiv för Zoologi, xi., 1918, 23, Pl. iii., fig. 6.
2. *neozelandica*, Navas, Memorias, 1912, 168. New Zealand.
3. *vaga*, Navas, Ann. Soc. scient. Brux., 1914, 231; locality unknown.
- *4. *annulata*, Esben-Petersen, Proc. Linn. Soc. N.S. Wales, 1915, 59, Pl. vi., fig. 1; Pl. vii., fig. 9.
- *5. *maculata*, Esben-Petersen, Arkiv för Zoologi, xi., 1918, 23, Pl. iii., fig. 4.

Uncertain species.

Myrmeleon tigrinus, Fabricius, Syst. Ent., p. 312. Australia.

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EXPLANATION OF PLATES XLV.-XLVI.

Plate xlv.

1. *Compsoleon occultus* Walk. Type. Brit. Mus.
2. *Adelopteron testaceum*, n.sp. Type. Coll. Tillyard.
3. *Platyleon froggatti*, n.sp. ♀ Type. Coll. Froggatt.
4. *Ceraloleon mjobergi*, n.sp. ♂ Type. Stockholm Mus.
5. *Austrogymnocnemia australis*, n.sp. ♀ Cotype. Stockholm Mus.
6. *Austrogymnocnemia tipularia* Gerst. Type. Greifswald Mus.
7. *Austrogymnocnemia pentagramma* Gerst. Type. Greifswald Mus.
8. *Neopteron inversum* Navas. Type. Vienna Mus.

Plate xlv.

9. *Stenogymnocnemia malus* Walk. Type. Brit. Mus.
10. *Distoleon sommolentus* Gerst. Type. Greifswald Mus.
11. *Formicaleo brevisculus* Gerst. Type. Greifswald Mus.
12. *Formicaleo septus* Gerst. Type. Greifswald Mus.
13. *Formicaleo congestus* Gerst. Type. Greifswald Mus.
14. *Formicaleo hilli*, n.sp. ♀ Type. Coll. Tillyard.
15. *Escura divergens* Navas. Type. Vienna Mus.
16. *Heteroleon pulchellus*, n.sp. ♀ Type. Coll. Tillyard.
17. *Heteroleon apicalis* n.sp. ♀ Type. Coll. Tillyard.
18. *Dictyoleon nervosus*, n.sp. Type. Imperial Bureau of Ent., Brit. Mus.